

Summer is Prime Time for Risk of Infection from the Waterborne Parasites *Cryptosporidium* and *Giardia*

The icy glacial stream or clear brook so tempting to a thirsty hiker may carry unseen danger from *Giardia*. Another waterborne protozoan parasite, *Cryptosporidium*, is resistant to concentrations of chlorine used in routine water treatment and can occur in tap water. These parasites have a life stage that can survive adverse environmental conditions, and both can infect the human gastrointestinal tract. *Cryptosporidium* is found in many vertebrate species including birds, fish, reptiles, small mammals (rodents, cats, dogs), and large mammals (particularly cattle and sheep). *Giardia* can infect mammals such as beavers, sheep, cattle, dogs, and cats.

Transmission is fecal-oral, and routes include contaminated recreational water or drinking water, contaminated food, person-to-person, or animal-to-person. At greatest risk for infection are those who drink natural water or treated water that is not filtered (both in this country and when traveling abroad), persons associated with day-care centers, and those whose sexual practices include oral-anal contact. Asymptomatic infections are common and constitute a source of infection for others.

Between 500 to 1,000 cases of giardiasis are reported annually in Washington. Infection is most common during the summer and among young children (see figure on page 2). Although cryptosporidiosis is not a reportable disease in Washington, the Department of Health has investigated several outbreaks over the past few years.

Symptoms and Diagnosis

Cryptosporidiosis causes cramping diarrhea (often profuse and watery), and in children is preceded by anorexia and vomiting. Giardiasis is associated with a variety of intestinal symptoms such as chronic

diarrhea, steatorrhea with malabsorption of fat and fat-soluble vitamins, abdominal cramps, bloating, fatigue, and weight loss. General malaise, fever, anorexia, nausea, and vomiting sometimes occur with either infection. Symptoms can last for weeks.

These infections may be quite serious for persons with compromised immune systems, especially those with HIV/AIDS or an immunoglobulin deficiency, or who are on immunosuppressive therapy. Prolonged diarrhea can result in severe dehydration and possibly death. The very young, older

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Say Goodbye to Joe Camel

The landmark settlement proposed by the tobacco industry and 40 state attorneys general has filled the news lately. But what does it mean and will it improve the public's health? The initial litigation, which led to the settlement talks, was intended to:

- protect children from deceptive tobacco advertising and reduce youth access to tobacco;
- provide full public disclosure of the health effects of tobacco products (e.g., see results of new study, page 4);
- protect consumers by changing the conduct of tobacco companies;
- reimburse states and individuals for their tobacco-related health care costs.

The focus was to change the practices of this industry and to reduce tobacco-related disease and death.

The proposed settlement supports the provisions of the Food and Drug Administration (FDA) rule that makes the sale of

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Parasites *(from page 1)*

persons, and those with pre-existing debilitating conditions are also at greater risk for more pronounced illness.

Both giardiasis and cryptosporidiosis are diagnosed by stool analysis, but some laboratories will not screen for *Cryptosporidium* unless it is specifically requested. Giardiasis also can be diagnosed in duodenal fluid (by aspiration or string test), in mucosa obtained by small intestine biopsy, or with an antigen test.

Treatment and Prevention

No specific treatment is uniformly effective for cryptosporidiosis. Most immunocompetent persons have a self-limited illness. Young children, elderly patients, and immunocompromised patients should be advised to drink extra fluids and may benefit from oral rehydration therapy. Over-the-counter antidiarrheal medications may help to lessen the severity of diarrhea. Patients with persistent giardiasis are usually treated with metronidazole (Flagyl). Furazolidone is available in pediatric suspension for young children and infants. Drug resistance and relapses may occur.

Boiling water for three minutes will destroy both *Cryptosporidium* and *Giardia*. Many types of recreational or home water filters can be used when boiling is not possible, but consumers should ensure they purchase a filter specifically designed to

remove these organisms. Bottled water is another option for home use. It is important to verify that the filter or the bottling method eliminates both organisms.

The most effective means of preventing transmission of enteric organisms is to wash hands frequently, especially before preparing food and after going to the toilet or changing a diaper. Persons with diarrhea should take special care if around anyone with a weakened immune system and should not swim in public bathing areas while they have diarrhea and for at least two weeks after each attack. Immunocompromised persons should avoid fecal exposure through animal contact or sexual practices; they may also wish to wash, peel, or cook all vegetables and to take extra measures, such as boiling water or filtering their drinking water, to ensure its safety.

Web Information Resources

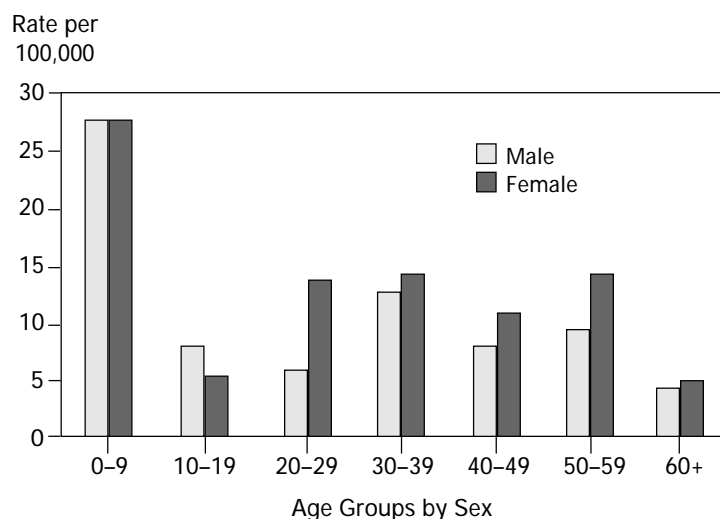
The DOH web site includes fact sheets on *Giardia* and *Cryptosporidium*. The address is: <http://www.doh.wa.gov/topics/>. The web site of the Centers for Disease Control and Prevention offers additional information on *Cryptosporidium* at: <http://www.cdc.gov/ncidod/diseases/>. ♦

New Guidelines Issued for Type 2 Diabetes Testing

About 7–8 million persons in the United States are unaware that they have adult-onset (Type 2) diabetes, half the 15 million estimated to suffer from this disorder. To identify millions of undiagnosed diabetics and to help them avert the serious consequences of untreated disease, a panel convened by the American Diabetes Association has recommended that all persons age 45 and older be tested for Type 2 diabetes.

Persons with Type 2 diabetes may experience only vague symptoms, and research has shown that they typically have the disorder for seven years before it is diagnosed. The ADA panel also recommended that the standard for diagnosis be lowered from a fasting blood sugar concentration of 140 mg/dl to 126 mg/dl, and that adults be tested every three years. Those with risk factors for diabetes should be tested at a younger age or more frequently. The Centers for Disease Control and Prevention has endorsed the new guidelines.

1996 Incidence Rates for Giardiasis Cases in Washington, by Age and Sex



Monthly Surveillance Data by County

June 1997* – Washington State Department of Health

County	E. coli O157:H7	Salmonella	Shigella	Hepatitis A	Hepatitis B	Non-A, Non-B Hepatitis	Meningococcal Disease	Pertussis	Tuberculosis	Chlamydia	Gonorrhea	AIDS	Pesticides†	Lead\$#
Adams	0	0	0	0	0	0	0	0	1	3	0	0	2	0/0
Asotin	0	0	0	0	0	0	0	0	0	0	0	0	0	0/0
Benton	0	0	0	2	0	0	0	1	1	30	1	1	5	0/22
Chelan	0	1	0	0	0	0	0	0	0	7	0	0	2	2/7
Clallam	0	0	0	0	1	0	0	0	0	4	0	0	2	0/0
Clark	0	0	0	0	1	2	0	3	0	37	1	1	0	0/#
Columbia	0	0	0	0	0	0	0	0	0	0	0	0	0	0/0
Cowlitz	0	1	0	0	0	0	0	0	0	6	0	1	1	0/7
Douglas	0	1	0	0	0	0	0	0	0	5	0	0	0	0/0
Ferry	0	0	0	0	0	0	0	0	0	0	0	0	0	0/0
Franklin	0	0	1	0	0	0	0	0	0	10	3	0	7	0/#
Garfield	0	0	0	0	0	0	0	0	0	0	0	0	0	0/0
Grant	0	0	0	0	0	0	0	1	1	23	2	0	6	0/0
Grays Harbor	0	0	0	1	1	0	0	1	0	5	0	0	0	0/5
Island	0	0	0	0	0	0	0	0	0	5	0	0	0	0/0
Jefferson	0	0	0	0	0	0	0	0	0	0	0	0	0	0/0
King	0	13	3	2	0	0	0	2	10	225	74	20	10	2/33
Kitsap	1	2	1	2	1	0	0	0	2	40	8	0	1	1/17
Kittitas	0	1	0	1	0	0	0	0	0	3	0	1	1	0/0
Klickitat	0	0	0	0	0	0	0	0	0	4	0	0	1	0/0
Lewis	0	0	0	0	0	0	1	0	0	7	2	0	1	0/0
Lincoln	0	0	0	0	0	0	0	0	0	1	0	0	0	0/0
Mason	0	0	0	0	1	0	0	0	0	7	1	2	1	0/#
Okanogan	0	0	1	0	1	0	0	1	0	4	0	1	2	0/0
Pacific	0	0	1	0	1	0	0	0	0	4	0	0	1	0/0
Pend Oreille	0	0	0	0	0	0	0	0	0	0	0	0	0	0/0
Pierce	2	6	2	2	1	1	1	1	5	125	36	2	2	1/108
San Juan	0	0	0	1	0	0	0	1	0	1	0	0	0	0/0
Skagit	0	1	0	3	0	0	0	0	0	8	1	1	0	0/7
Skamania	0	0	0	0	0	0	0	0	0	0	0	0	0	0/0
Snohomish	3	8	1	4	0	0	0	0	2	82	12	2	1	0/12
Spokane	0	3	0	9	0	0	1	9	0	48	10	5	6	2/24
Stevens	0	0	0	1	0	0	0	0	0	3	0	0	0	0/#
Thurston	0	4	0	2	0	0	0	2	1	17	1	0	0	0/9
Wahkiakum	0	0	0	0	0	0	0	0	0	0	0	0	0	0/0
Walla Walla	0	0	0	8	0	0	0	0	0	8	0	0	0	2/15
Whatcom	0	0	0	3	0	0	0	0	0	25	1	2	1	0/7
Whitman	0	1	0	6	0	0	0	0	0	0	0	0	1	0/1
Yakima	0	3	2	13	1	0	0	1	4	41	2	2	8	1/18
Unknown														0/1

Current Month	6	45	12	60	9	3	3	23	25	788	155	41	62	11/298
June 1996	6	63	13	46	7	6	8	43	15	737	133	37	62	10/347
1997 to date	23	281	100	280	39	14	52	182	146	4602	965	333	159	68/2039
1996 to date	18	270	106	282	53	32	54	182	129	5021	1098	352	194	77/2299

* Data are provisional based on reports received as of June 30, unless otherwise noted.

† Unconfirmed reports of illness associated with pesticide exposure.

\$# Number of elevated tests (data include unconfirmed reports) / total tests performed (not number of children tested); number of tests per county indicates county of health care provider, not county of residence for children tested; # means fewer than 5 tests performed, number omitted for confidentiality reasons.



WWW Access Tips

For more information on the tobacco industry settlement, visit the attorney general's web site at: <http://www.wa.gov/ago/>

Questions? Comments?

Contact the editors at the address on the mailing panel or by email at function@u.washington.edu

Goodbye Joe (from page 1)

cigarettes and smokeless tobacco to anyone younger than 18 years of age a federal violation (approved by President Clinton in August 1996 to become effective in August 1997), and in addition:

- bans all vending machines;
- places tobacco products behind the counter and out of reach;
- further restricts mail order sales;
- institutes a nationwide system of retailer licenses;
- provides full funding for enforcement of youth access rules;
- ensures that states and local governments will not be preempted from enacting stronger laws.

As with the FDA rule, the settlement further limits advertising of cigarettes including the total elimination of billboards and outdoor signs, elimination of human images and cartoon characters from all advertising and cigarette packages, and banning Internet advertisement in the United States. The inclusion of these limitations in the settlement is advantageous, because the marketing and advertising restrictions required by the FDA rule have been challenged in court and may not hold.

The proposed settlement also includes funds for a nationwide public education and counteradvertising program and for smoking cessation programs. Further, health warning labels on tobacco products will be strengthened, as will indoor air policies to protect the public's health from environmental tobacco smoke. Finally, the industry will be subject to harsh financial

penalties if the reductions in youth smoking are not met. The provisions of the settlement will be enforced by both the FDA and state attorneys general. See WWW Access Tips for online information.

In Washington, youth experimentation with tobacco is increasing; in 1995, nearly 65% of twelfth graders reported trying a cigarette and 12% reported smoking half a pack a day. Because 80% of smokers begin as adolescents, the focus of the settlement to reduce youth interest in and access to tobacco should have significant impact.

Estimated Annual Infant and Childhood Deaths Caused by Parental Smoking

A recent study* has estimated that at least 6,200 children die each year in the United States because of their parents' smoking. An estimated 5.4 million children annually suffer from ailments such as ear infections and asthma that are triggered by parents' smoking and that annually cost \$4.6 billion to treat.

Deaths	Link or Cause
2,800	Low birthweight due to smoking by pregnant women
2,000	Sudden infant death syndrome due to secondhand tobacco smoke
1,100	Respiratory infections
250	Burns from fires caused by cigarettes, matchers, or lighters
14	Asthma

*Aligne CE, Stoddard JJ: Tobacco and children: An economic evaluation of the medical effects of parental smoking. *Arch Pediatr Adolesc Med* 1997; 151:648-653.

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U.S. Postage
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Washington State
Dept. of Printing

epiTRENDS
P.O. Box 47812
Olympia, WA 98504-7812



epiTRENDS
is published monthly by
the Washington State
Department of Health.
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Secretary
Mimi L. Fields, MD, MPH
Deputy Secretary and
State Health Officer
Paul Stehr-Green, DrPH, MPH
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